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Report

Video Violence and Aggression

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Within a study of juvenile media use, a subsample of 807 school boys and girls of grades 7, 8, and 9 answered two questionnaires concerning spontaneous and reactive aggressivity. Three indices of violence viewing were constructed on the basis of consumption frequencies of relevant film genres (cinema, video) and TV series. There were significant correlations between the three indices of violence viewing and the two measures for aggressivity. The correlations turned out to be higher for video and cinema violence viewing than for TV violence viewing: Using two-stage least-square methods, the coefficients of a nonrecursive model of the reciprocal connections between violence viewing and aggression were estimated. Empirical evidence of the "causal" significance of violent video use for increasing aggressive behavior was found. Influences in the other direction turned out to be inconsistent. The attempt was made to explain the effects of home video and cinema in terms of specific offerings and the reception situation.

In recent years there has been a steady increase in the distribution of home video. For the Federal Republic of Germany, it is assumed that a video cassette recorder (VCR) is available in every fourth household (Lukesch, 1985). In Kuwait, with the world's highest density of video recorders, about 90% of all households own one. Video is predominantly used to record television programs, but one can also rent or buy special video film productions.

One of the dangers of video stems from the sheer number of films offered depicting brutality, bestiality, and very violent pornography. This situation should again give reason to reflect on the effects of mass media, as there are only few examples of special research about the medium home video (Brosius, 1987; Tamborini & Stiff, 1987). There is, however, a large bulk of empirical evidence demonstrating a connection between violence viewing (predominantly television) and viewer aggression. This evidence is based on experimental work (Bandura, Ross & Ross, 1963a,b; Steuer, Applefield & Smith, 1971; Savitsky et al., 1971; Berkowitz, 1982; Thomas, 1982) as well as on field studies (Huesmann & Eron, 1986a; Sheenan, 1983; Belson, 1978; Turkat, 1977; Roloff & Greenberg, 1979). Only few studies found no or insignificant connections (Carlisle & Howell, 1974; Milavsky et al., 1982). The latter studies can be confronted with other ones using the same methodology and coming with substantial correlations (Singer, Singer & Rapaczynski, 1984).

Although the evidence relating the exposition to media violence to consumer aggression prevails, there also exist some critical arguments (Leyens, Herman & Dunand, 1984) diminishing the thesis of strong media effects. Mainly three aspects

of the empirical work are criticized (Kunczik, 1987; Wiegman, Kuttschreuter & Baarda, 1986, p. 17; Kaplan & Singer, 1976):

- 1) the validity of the constructs of aggression used and the methods of operationalization (e.g., very little correspondence between attitudinal measures and real aggressive behavior, “mild” forms of aggressive behaviors in laboratory settings, unrealistic and unreal life forms of aggression);
- 2) the constricted ecological validity of experimental results (e.g., only short-term effects of media exposition, invalid experimental media stimuli, no possibility to explain cumulative media effects of inconsistent behavior models);
- 3) the unknown causation in correlational field studies (e.g., self-selection of aggressive persons to aggressive films, small effects in field studies compared with greater effects in experimental settings).

Indeed, it can be helpful to use highly detailed descriptions for the media stimuli as well as for the aggressive behaviors (Groebel, 1986). On the other hand, too much differentiation hinders empirical work on the long-term effect of media use or makes it very uneconomical. There are also pragmatic decisions to use “mild” or “unrealistic” measures of aggression (for instance, intensity of electric shocks delivered) or attitude measures.

The advantage of experimentation in media research is that it raises the possibility of answering unequivocally the question of causation. By experimental methods it is also possible not only to demonstrate short-term effects of controlled media exposition, but also to show effects over at least a few weeks (Parke et al., 1977; Steuer, Applefield & Smith, 1971).

Although field studies in media research may at first appear to be ecologically more valid, problems remain in answering the question of causation (Stein & Friedrich, 1975; Hovland, 1959). In some instances, repeated panel measurement of comparable variables and time-lagged cross-correlations were used to show the causal relevance of media consumption to later aggressiveness (Eron et al., 1972; Lefkowitz et al., 1977). But these results were criticized for many reasons (Kunczik, 1987) and could not be replicated by other researchers (Sheenan, 1983). As a consequence, more refined statistical techniques are indicated, for example, nonrecursive modeling, to show the reciprocal operation of selective media exposition on the one hand, as well as the influence of the media stimuli for personality variables of the recipients on the other. Through these methods, hypotheses about the bidirectionality of the influence processes (Huesmann & Eron, 1986) can be adequately proved. The application of such models could also settle the discussion between the proponents of the traditional media effect approach and those of the so-called uses and gratification approach, because with such methods self-selection to media as well as media effects can be modeled.

Method

Subjects

The study is part of a larger cross-sectional survey, predominantly designed to explore the media use (TV, cinema, home video, video plays, print media) by German youth. Out of 4,089 teenagers, 807 randomly selected participants had to answer two questionnaires designed to measure spontaneous and reactive aggressiveness. The study was conducted in the three main types of schools existing in Germany. In the subsample there were 48.3% boys and 51.7% girls; 27.3% were seventh-, 37.2% eighth-, and 34.3% were ninth-graders. Fifteen percent stemmed from the “classical” German secondary school (Gymnasium), 29% attended a junior technical school (Realschule), and 56% an elementary school (Hauptschule). As to socio-economic status, measured by a status rating related to father’s occupations, all status groups were included (upper middle class: 13.7%, middle class: 32.2%, lower middle class: 40.6%, lower class: 13.5%).

Measurement Instruments

- 1) *Scale for measurement of spontaneous aggression (Agg 1)*: The instrument consists of 42 items, comprising aggressive behaviors in different social settings (e.g., fighting with someone in school, smashing a window, damaging a parked car, trying to start a brawl). The participants had to rate how often they were involved in such activities during the last half year (1 = never, 5 = nearly every day). Some items had been used in a study about behavior problems in schools (Helmke & Dreher, 1979), the rest stems from the media study by Belson (1978, p. 207). All part-whole corrected item-test correlations turned out to be significant (range: .32 to .66), and internal consistency (computed by the method of Hoyt) turned out to be very high ( $r_{tt} = .94$ ).
- 2) *Scale for measurement of reactive aggression (Agg 2)*: This instrument was an adaptation of a method developed by Belson (1978, p. 288). The subjects had to rate under which conditions they would use certain aggressive behaviors (highest value 8 = if I wanted some fun, lowest value 1 = if my life was threatened). Twelve behaviors had to be rated according the above scheme (e.g., hitting somebody with a bottle, shooting someone with a gun, swearing at someone). All items of this scale had acceptable item-test correlations (range: .19 to .77); the coefficient of internal consistency was  $r_{tt} = .89$ .
- 3)–5) To assess the consumption of violence by media, there were lists with different film genres (for cinema and video) or with the titles of series (for television). The participants had to rate how often they look at these genres (1 = never, 5 = very often). From a priori considerations, the ratings of violent contents were taken together (e.g., video: crime films, westerns, kung-fu, action films, science fiction, sex films, war films, horror and atrocity films). By methods of item and

scale analyses, the summing up of the ratings was justified for all three media violence indices (violence by cinema (Agg-Cin):  $r_{it} = .87$ ,  $.46 \leq r_{it} \leq .69$ ; violence by television (Agg-TV):  $r_{it} = .80$ ,  $.35 \leq r_{it} \leq .60$ ; violence by video (Agg-Vid):  $r_{it} = .88$ ,  $.51 \leq r_{it} \leq .70$ ).

## Results

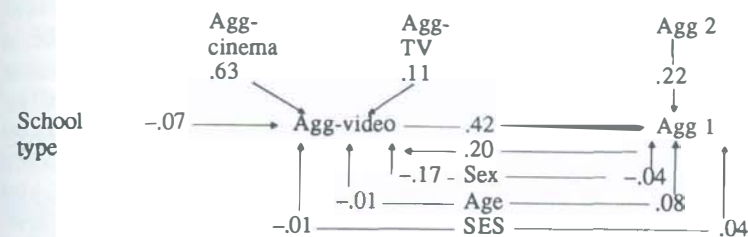
Table 1 contains all the intercorrelations between the sociodemographic data, the violence viewing measures, and the measures for aggression (every correlation coefficient depends on the maximum of pairwise answered data). Sex and type of school (dummy variable with 1 = elementary school) is significantly correlated with all violence viewing scales and with the measures for aggression. Social status correlates significantly with the quality of media use though not with the measures for aggression. Within the violence viewing variables, there is an especially high connection with the consumption of aggressive films by video or cinema, which can perhaps be taken as a hint for common forms of usage. All three indices of the consumption of violence through media are positively and significantly correlated with the two measures for aggression. Surprisingly, the connection between violence viewing through cinema and the measures for aggression seems somewhat higher than the correlation between television violence and aggression.

To test the hypotheses about the reciprocal connection between violence viewing and aggression, a nonrecursive model of this relationship was made and the coefficients were estimated with two-stage least-square methods (Wonnacott & Wonnacott, 1970). In this model we allowed for a "causal" influence between aggression and violence viewing. To compute such a model, it is necessary to introduce so-called instrumental variables, which are used as additional estimators for the central variables in the model. As an instrument for spontaneous aggression (Agg 1), the measure for reactive aggression (Agg 2) was used; instruments for the

Table 1. Relationships of sociodemographic variables, violence viewing and aggression.

	N	aM	s	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1) Type of School	4084	1.54	0.50	—							
2) Sex	4024	1.48	0.50	.07	—						
3) Age	4016	14.27	1.09	.03	-.01	—					
4) SES	3496	3.70	1.12	.33	.00	.02	—				
5) Agg-Cinema	3895	19.70	7.93	-.24	-.30	.16	-.15	—			
6) Agg-TV	4041	27.44	8.36	-.26	-.11	-.01	-.21	.34	—		
7) Agg-Video	2837	25.13	9.32	-.25	-.33	.07	-.14	.66	.34	—	
8) Agg1	807	64.06	19.49	-.07	-.21	.11	-.03	.36	.12	.25	—
9) Agg2	719	39.99	17.93	-.25	-.14	-.01	-.05	.18	.12	.11	.27

Figure 1. 2SLS-solution about estimated coefficient belonging to a nonrecursive model for video violence viewing (Agg-Video) and spontaneous aggressiveness (Agg 1).



violence viewing per video (Agg-video) were violence viewing by cinema (Agg-cinema) and by television (Agg-TV) and type of school. Sex, age, and socioeconomic status were also built into the model, allowing for influence on both central variables (Figure 1).

As Figure 1 shows, there is a clear influence of video violence viewing on spontaneous aggression. The inverse relation also is significant, but the coefficient is negative, so it can hardly be said that the more aggressive teenagers more often look at aggressive videos (the correlation between the residuals of Agg-Video and Agg 1 amounts to  $-.07$ ; this very low coefficient can be considered to be a quite good data fit of our model). The results can be taken as an argument that violence viewing through video increases aggressiveness in the juvenile recipients. The inverse relationship—that there is a self-selection effect in the sense that the more aggressive search for violent videos—could not be substantiated.

A somewhat modified version of the above-stated model by exchanging Agg-Video with Agg-TV was also computed. This model also conforms to the hypothesis of increased aggression by viewing violent TV series (.47), and it shows no confirmation for the reverse influence (.08). However, there was a high and unexplainable correlation between the residuals of Agg-TV and Agg 1 ( $r = -.49$ ), which means this model does not fit the data very well.

If the third indicator of violence viewing (Agg-cinema) is used as the "causal" variable, again an effect of increasing aggression can be seen (.28). This model entails as well the reverse effect of selective media exposition (.32). Again, in this model we are confronted with a puzzlingly high correlation between the residuals ( $r = -.39$ ), which could not be explained.

## Discussion

The results demonstrate on the level of the zero-order correlation coefficients a significant connection between violence consumption through all types of media and aggression of the juvenile participants. Whereas most studies are restricted only to the correlation between TV use and aggression (e.g., Huesmann & Eron, 1986; Wiegman, Kuttschreuter & Baarda, 1986; NIMH, 1982), here also the significance



of the old medium cinema and the new one, home video, could be demonstrated. The use of cinema or video for violence consumption shows higher connections with aggressiveness than TV violence. For both cinema as well as for video violence, one has to search actively outside the home, whereas TV consumption is mostly passive. The higher correlation between violence consumption by cinema and video (.66) compared with the correlation between violence consumption by TV and cinema (.34) or TV and video (.34) may be explained by another common factor: Watching videos and going to the cinema are predominantly peer-oriented activities. They indicate an orientation beyond the family or family leisure time, and represent commonly shared time with peers (Lukesch, 1986). In contrast, TV viewing is much more a compensation of social deficiencies or a dependency on parents and the parental home. Of course, this differentiation is not always clearcut, but media consumption is differently embedded in different social situations.

In our cross-sectional study it was not possible to control for aggressiveness at earlier stages of personality development (Huesmann & Eron, 1986a; Wiegman et al., 1986; Singer, Singer & Rapaczynski, 1984; Sheenan, 1983; Milavsky et al., 1982). But the hint of Huesmann and Eron (1986b) that there could be a reciprocal process between media use and aggression—the arguments of these authors were severely criticized by Wiegman et al. (1986, p. 139)—was tested by building a nonrecursive model, the coefficients of which were estimated by 2SLS-procedures. The model turned out to show only a consistent link between violence consumption and aggression, whereas for the influence in the other direction no consistent findings could be proven.

It is known that a large part of consumed videos show extended violence, bestiality, and pornography. These videos can be rented for a small fee and are predominantly viewed with friends and peers. The films offered together with the reception situation create an additional risk of violent behavior, the effects of which will become more distinct in the near future.

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